

### Abstract

A downhole drilling apparatus suspended by tubing includes a drill bit driven by an electric motor powered by a cable means. The motor is  
5 mounted upon a hollow shaft which allows fluid to pass through, so that a fluid circuit along the tube and back along the annulus between the borehole and the tubing via the drill bit is established. The state of the motor, particularly its speed and torque, can be monitored, and the motor may then be regulated as a result of the this data. Various sensors may be included in  
10 the drilling apparatus, and the data gathered similarly used to regulate the motor. Thrust means are included to urge the drill along the borehole. Supplementary pumps may be provided to assist the fluid flow. Both the thrust means and the pumps may be controlled by the control means.